Appl. No. 09/992,249
•Amdt. dated September 4, 2003
Reply to Office action of April 23, 2003

Amendments to the Claims:

Claim1 (currently amended) A fabric filter having a stiffener applied thereto for high temperature gaseous filtration applications, comprising:

- (a) a fabric material capable of withstanding operating temperatures of at least about 450 degrees Fahrenheit for prolonged periods of time without deformation or deterioration; and
- (b) a chemical stiffener applied to said fabric material, wherein the chemical stiffener is comprised of a resorcinol-formaldehyde resin solution.

Claim 2 (original) The fabric filter of Claim 1 wherein said material is fiberglass.

Claim 3 (original) The fabric filter of Claim 1 wherein said fabric is woven.

Claim 4 (original) The fabric filter of Claim 3 wherein said fabric is woven with fiberglass ECDE yarns.

Claim 5 (currently amended) The fabric filter of Claim 1 wherein the stiffener is <u>further</u> comprised of <u>resorcinol-formaldehyde resin solution</u>, acrylic resin emulsion, hexamethylenetetramine, and water.

Claim 6 (canceled)

Claim 7 (original) The fabric filter of Claim 5 wherein the stiffener is further comprised of ammonia.

Claim 8 (canceled)

Claim 9 (original) The fabric filter of Claim 5 wherein said chemical stiffener is comprised of about 5 to 40 percent resorcinol-formaldehyde resin solution, about 1 to 10 percent acrylic resin

emulsion, about 0.1 to 2 percent ammonia, about 0.1 to 5 percent hexamethylenetetramine, and about 43 to 93.8 percent water.

Claim 10 (original) The fabric filter of Claim 9 wherein said chemical stiffener is comprised of about 30 percent resorcinol-formaldehyde resin solution, about 5 percent acrylic resin emulsion, about 1.3 percent ammonia, about 2 percent hexamethylenetetramine, and about 61.7 percent water.

Claim 11 (original) The fabric filter of Claim 1 further including a first applied lubricant comprised of water and a silicone lubricant.

Claim 12 (original) The fabric filter of Claim 1 further including a first applied lubricant comprised of water and a dispersion of polytetrafluorethylele.

Claim 13 (original) The fabric filter of Claim 1 further including a first applied lubricant comprised of water, a silicone lubricant, and a dispersion of polytetrafluorethylene.

Claim 14 (original) The fabric filter of Claim 13 wherein the first applied lubricant is comprised of about 5 to 50 percent phenol silicon polymer, about 1 to 40 percent polytetrafluorethylene dispersion, and about 10 to 94 percent water.

Claim 15 (original) The fabric filter of Claim 1 further including a last applied protective layer comprised of a dispersion of polytetrafluorethylene and water.

Claim 16 (original) The fabric filter of Claim 15 wherein the last applied protective layer is comprised of about 5 to 30 percent polytetrafluorethylene dispersion and about 70 to 95 percent water.

Claim 17 (original) The fabric filter of Claim 16 wherein the last applied protective layer is comprised of about 20 percent polytetrafluorethylene dispersion and about 80 percent water.

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Claim 18 (original) The fabric filter of Claim 1 wherein the fabric material is suitable for filtration at temperatures between about 450 degrees Fahrenheit and 550 degrees Fahrenheit.

Claim 19 (original) The fabric material of Claim 1 wherein the fabric material is so formed that openings within the fabric are no larger than about 10 microns.

Claim 20 (original) The fabric material of Claim 1 wherein the stiffened fabric material is pleated to provide increased filtration area.

Claim 21 (currently amended) A fibrous fabric filter having a stiffening system applied thereto for maintaining form in high temperature filtration applications, comprising:

- (a) a fibrous fabric material capable of withstanding operating temperatures of at least 450 degrees Fahrenheit for prolonged periods of time without deformation or deterioration;
- (b) a stiffening system comprising:
 - (i) an inner treatment layer applied to said fibrous fabric material, said inner treatment layer comprising water, a silicone lubricant, and a dispersion of polytetrafluorethylene;
 - (ii) an intermediate treatment layer applied to said inner treatment layer, said intermediate treatment layer comprising <u>a</u> resorcinol-formaldehyde resin solution, acrylic resin emulsion, ammonia, hexamethylenetetramine, and water;
 - (iii) an outer treatment layer applied to said intermediate treatment layer, said outer treatment layer comprising a dispersion of polytetrafluorethylene and water; and
- (c) the fibrous fabric material being pleated to increase the surface area.

Claim 22 (original) The fibrous fabric filter of Claim 21 wherein said fabric is woven with fiberglass ECDE yarns.

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Claim 23 (original) The fibrous fabric filter of Claim 21 wherein said inner treatment layer is comprised of about 5 to 50 percent phenol silicon polymer, about 1 to 40 percent polytetrafluorethylene dispersion, and about 10 to 94 percent water.

Claim 24 (original) The fibrous fabric filter of Claim 23 wherein said inner treatment layer is comprised of about 30 percent phenol silicon polymer, about 20 percent polytetrafluorethylene dispersion, and about 50 percent water.

Claim 25 (original) The fibrous fabric filter of Claim 21 wherein said intermediate treatment layer is comprised of about 5 to 40 percent resorcinol-formaldehyde resin solution, about 1 to 10 percent acrylic resin emulsion, about 0.1 to 2 percent ammonia, about 0.1 to 5 percent hexamethylenetetramine, and about 43 to 93.8 percent water.

Claim 26 (original) The fibrous fabric filter of Claim 25 wherein said intermediate treatment layer is comprised of about 30 percent <u>phenol resorcinol</u>-formaldehyde resin solution, about 5 percent acrylic resin emulsion, about 1.3 percent ammonia, about 2 percent hexamethylenetetramine, and about 61.7 percent water.

Claim 27 (original) The fibrous fabric filter of Claim 21 wherein said outer treatment layer is comprised of about 5 to 30 percent polytetrafluorethylene dispersion and about 70 to 95 percent water.

Claim 28 (original) The fibrous fabric filter of Claim 27 wherein said outer treatment layer is comprised of about 20 percent polytetrafluorethylene dispersion and about 80 percent water.

Claim 29 (original) The fabric filter of Claim 21 wherein the fabric material is suitable for filtration at temperatures between about 450 degrees Fahrenheit and 550 degrees Fahrenheit.

Claim 30 (original) The fabric filter of Claim 21 wherein the filtration efficiency of the stiffened fabric material is greater than 99 percent for particulate matter of about 10 microns or larger.

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Claims 31-51 (canceled)

Claim 52 (new) A fabric filter having a stiffener applied thereto for high temperature gaseous filtration applications, comprising:

- (a) a fabric material capable of withstanding operating temperatures of at least about 450 degrees Fahrenheit for prolonged periods of time without deformation or deterioration; and
- (b) a chemical stiffener applied to said fabric material, wherein the chemical stiffener is comprised of a phenol-formaldehyde resin solution.

Claim 53 (new) The fabric filter of Claim 52 wherein said material is fiberglass.

Claim 54 (new) The fabric filter of Claim 52 wherein said fabric is woven.

Claim 55 (new) The fabric filter of Claim 54 wherein said fabric is woven with fiberglass ECDE yarns.

Claim 56 (new) The fabric filter of Claim 52 wherein the stiffener is further comprised of acrylic resin emulsion, hexamethylenetetramine, and water.

Claim 57 (new) The fabric filter of Claim 56 wherein the stiffener is further comprised of ammonia.

Claim 58 (new) The fabric filter of Claim 52 further including a first applied lubricant comprised of water and a silicone lubricant.

Claim 59 (new) The fabric filter of Claim 52 further including a first applied lubricant comprised of water and a dispersion of polytetrafluorethylele.

Claim 60 (new) The fabric filter of Claim 52 further including a first applied lubricant comprised of water, a silicone lubricant, and a dispersion of polytetrafluorethylene.

Claim 61 (new) The fabric filter of Claim 60 wherein the first applied lubricant is comprised of about 5 to 50 percent phenol silicon polymer, about 1 to 40 percent polytetrafluorethylene dispersion, and about 10 to 94 percent water.

Claim 62 (new) The fabric filter of Claim 52 further including a last applied protective layer comprised of a dispersion of polytetrafluorethylene and water.

Claim 63 (new) The fabric filter of Claim 62 wherein the last applied protective layer is comprised of about 5 to 30 percent polytetrafluorethylene dispersion and about 70 to 95 percent water.

Claim 64 (new) The fabric filter of Claim 63 wherein the last applied protective layer is comprised of about 20 percent polytetrafluorethylene dispersion and about 80 percent water.

Claim 65 (new) The fabric filter of Claim 52 wherein the fabric material is suitable for filtration at temperatures between about 450 degrees Fahrenheit and 550 degrees Fahrenheit.

Claim 66 (new) The fabric material of Claim 52 wherein the fabric material is so formed that openings within the fabric are no larger than about 10 microns.

Claim 67 (new) The fabric material of Claim 52 wherein the stiffened fabric material is pleated to provide increased filtration area.